

IN THE CLAIMS:

1. (Currently Amended) A transmission element for transmitting information between downhole tools located on a drill string, the transmission element comprising: ~~an annular torodial~~ core constructed of a magnetically-conductive material; at least one conductor helically coiled around the ~~annular torodial~~ core and electrically isolated therefrom; an annular housing constructed of an electrically conductive material and partially enclosing the ~~annular torodial~~ core and the at least one conductor; the annular housing further shaped to reside with an annular recess formed into a surface of a downhole tool, and being electrically insulated from the surface thereof; a biasing member to effect a bias between the annular housing and the annular recess, urging the annular housing in a direction substantially perpendicular to the surface.
2. (Original) The transmission element of claim 1, further comprising a retention mechanism for retaining the annular housing within an annular recess.
3. (Original) The transmission element of claim 1, wherein the at least one conductor is coated with an electrically insulating material.
4. (Original) The transmission element of claim 1, wherein the surface is selected from the group consisting of a secondary shoulder of a pin end, a secondary shoulder of a box end, a primary shoulder of a pin end, and a primary shoulder of a box end of a downhole tool.
5. (Original) The transmission element of claim 1, wherein the annular housing is at least partially exposed to the central bore of a downhole tool;
6. (Original) The transmission element of claim 1, wherein the biasing member is selected from the group consisting of a metal spring, an elastomeric material, and an elastomeric-like material.
7. (Currently Amended) The transmission element of claim 1, wherein the ~~annular torodial~~ core is characterized by an elongate cross-section.

8. (Currently Amended) The transmission element of claim 1, wherein the annular torodial core has a cross-section characterized by a height at least twice that of its width.

9. (Original) The transmission element of claim 1, wherein the annular housing further comprises a shoulder formed along the exterior thereof, configured to engage a corresponding shoulder formed within an annular recess.

10. (Original) The transmission element of claim 1, wherein the annular housing is configured to make electrical contact with a second annular housing located on a second transmission element, and wherein the contact surfaces of each annular housing are formed to be self-cleaning.

11. (Currently Amended) A transmission element for transmitting information between downhole tools located on a drill string, the transmission element comprising: an annular torodial core constructed of a magnetically-conductive material; at least one conductor coiled around the annular torodial core and electrically isolated therefrom; an annular housing constructed of an electrically conductive material and partially enclosing the annular torodial core and the at least one conductor; the annular housing further shaped to reside with an annular recess formed into a surface of a downhole tool, and being electrically insulated from the surface thereof; means for effecting a bias between the annular housing and the annular recess;

12. (Original) The transmission element of claim 11, wherein the means for effecting a bias between the annular housing and the annular recess is due to radial tension between surfaces of the annular housing and an annular recess.

13. (Original) The transmission element of claim 12, wherein the radial tension between the surfaces of the annular housing and the annular recess are due to tension along at least one of the outside diameters, the inside diameters, and a combination thereof, of the annular housing and annular recess.

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14. (Original) The transmission element of claim 11, further comprising a retention mechanism for retaining the annular housing within an annular recess.

15. (Original) The transmission element of claim 11, wherein the annular housing is at least partially exposed to the central bore of a downhole tool;

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

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